



$$\mathbf{J}_{\text{out}} = \begin{pmatrix} A_x e^{i\delta_x} \\ A_y e^{i\delta_y} \end{pmatrix} = \begin{pmatrix} X + iY & Z + iW \\ -Z + iW & X - iY \end{pmatrix} \frac{1}{\sqrt{2}} \begin{pmatrix} 1 \\ 1 \end{pmatrix}$$

$$X^2 + Y^2 + Z^2 + W^2 = 1.$$